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21 MAY 1962

MEMORANDUM FOR: Chief, Analysis Branch, DD/CR
FROM : Chief, Publications Staff, ORR
SUBJECT : Release of CIA/RR GM 62-5, The Struggle
for Jordan Waters, May 1962, Confidential,
to Foreign Governments

1. It is requested that the attached copies of subject report
be forwarded as follows:

#93 - #97
#98
#101 - #103
#104
#99 - #100

2. All ORR responsibilities as defined in the DDCI memorandum of
13 August 1952, "Procedures for Dissemination of Finished Intelligence
to Foreign Governments," as applicable to this report, have been fulfilled.

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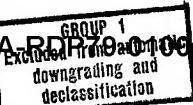
25X1

9 X Attachments

3
DOCUMENT NO.
NO CHANGE IN CLASS.
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CLASS. CHANGED TO: TS S C 1969
NEXT REVIEW DATE:
AUTH: HR 702
DATE: 29/6/79 REVIEWER:

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Copy No. 190

GEOGRAPHIC INTELLIGENCE MEMORANDUM

CIA/RR GM 62-5
May 1962

THE STRUGGLE FOR JORDAN WATERS



1. DOCUMENT NO.
2. CHANGE IN CLASS.
3. DECLASSIFIED
4. CLASS. CHANGED TO: TS S C
5. NEXT REVIEW DATE:
6. AUTH: HR 70-2
7. DATE: 29/5/79
8. REVIEWER:

25X

CENTRAL INTELLIGENCE AGENCY
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THE STRUGGLE FOR JORDAN WATERS

Approved For Release 2002/05/09 : CIA-RDP79-01006A000100270001-7

The first segment of the Israeli National Water Conduit, which will extend from the upper Jordan Valley to the Negev Desert in the South, is scheduled to receive water pumped from Lake Tiberias in late 1961. Progress on the construction of the first section of the conduit, the Jordan Valley Conduit, has been slow, but will be fast. With the completion of this segment, Jordan water will, for the first time, be transported beyond the limits of the Jordan Valley. The Arab states are firm in their opposition to this conduit, fearing irrigation diversion from the Jordan Valley can reduce, and they have little but tactfully presented retaliatory threats to deprive Israel of water by diverting major tributaries of the upper Jordan. South of Lake Tiberias on the lower Jordan River, Israel and Jordan are proceeding with less friction in the development of their respective irrigation projects.

I. The Master Plan of Israel

The core of Israel's plan for the development of water resources is the National Water Conduit -- a system of canals, tunnels, pumping stations, reservoirs, and pipelines to transport water overland from the Jordan Valley to southern Israel. This major project will be linked to regional projects so that available water can be used to the maximum. North of Lake Tiberias, the Jordan Valley National Water Conduit will connect with pipelines of the Yarmouk-Negor Project, which will carry water as far south as Beersheba in the northern Negev. Although the flow of the Jordan River is relatively small, Israel's plan is to divert it, and will eventually supply 10 percent of its water needs. The plan also relies heavily on the combined resources of ground water, seepage, surface runoff, and river re- turned from irrigation.

The Bet Shean Project, designed to irrigate the Jordan and Beit Shean Valleys south of Lake Tiberias, is not connected with the National Water Conduit. Here, water drawn directly from Lake Tiberias is to replace that now being pumped from the Yarmouk River. The Bet Shean Project will be the most important water source from plains being considered for the diversion to the lower Jordan of water from saline springs now emptying into Lake Tiberias and from the pumping of Yarmouk waters into Lake Tiberias during the winter flood season.

Israel originally planned to tap the Jordan River near the Banat Jacob Bridge in the Demilitarized Zone north of Lake Tiberias. The water there would have had to be pumped through the Jordan River Canal, which crosses the shores of Lake Tiberias. In 1953, a clash with Syria occurred while Israel was at work on the section of the canal within the Demilitarized Zone. Work was stopped after the issue was raised in the Security Council of the United Nations, and the 1.5 miles of canal within the DMZ was never completed. Instead, Israel decided to tap the Jordan to draw water for the National Water Conduit from Lake Tiberias, rather than the upper Jordan, by means of the pumping station at Tabghah. When, as Israel hopes, water becomes available from the upper Jordan River, the Tabghah pumping station will be converted into the hydroelectric plant originally planned.

When Stage I of Israel's plan is completed in late 1963, water from Lake Tiberias will be pumped to the area between the cities of Arad and Beersheba, a distance of 105-inch conduits, 3.4 miles of 105-inch steel pipe, 25 miles of open canal, and 6.7 miles of large-diameter tunnel. By 1964, Israel plans to pump about 160 million cubic meters (cu m) of water per year from Lake Tiberias; according to an Israeli estimate, this will be equivalent to 100 percent of the water needed for Stage II, tentatively planned for 1966, provides for a general increase in volume of pumped water and in storage and distribution facilities. By 1970, when all three stages of the plan have been completed, Israel expects to draw 350 million cu m of water from the Jordan River via the National Water Conduit, 100 million cu m for irrigation in the Hula area, and 50 million cu m for the Bet Shean Project, making a total of 470 million cu m per year withdrawn from the Jordan. Israel estimates place the average annual flow of the Jordan within Israel at about 500 million cu m per year with extremes of 350 million cu m and 700 million cu m.

II. Problems Arising in Israel

The ultimate success of Israeli water plans is closely associated with the climatic regime of the eastern Mediterranean -- an unreliable element at best. There are likely to be severe climatic and hydrological fluctuations upon which agriculture depends, and will result in water deficits in the coming years. Recent rainfall and a series of abnormally dry years have already brought about an unanticipated lowering of the water table on the coastal plain east of Tel Aviv. In the event of a prolonged threat to water supplies, the 105-inch steel pipeline will be planned to service both the eastern portion of the Jordan Valley and the He'ayin Springs. Through this temporary pipeline, surplus water from the Benyamin-Pardes areas north between Tel Aviv and Haifa is carried south to supplement the flow of Roash He'ayin Springs. At the estimated rate of 100 million cu m per year, the projected rate of withdrawal from the He'ayin Springs will provide only 120 million cu m a year whereas the sustained withdrawal during the late 1950's amounted to 180-200 million cu m per year.

The head of the Research Unit of the Mekorot Water Company, Ltd., which is the contractor for the water plan of Israel, has charged that a serious miscalculation has been made concerning the total volume of water that will be available from the Jordan River. The Mekorot Company has projected that the withdrawal of large volumes of water will lower the level of Lake Tiberias significantly. Both charges have serious economic implications, and both have been firmly denied by the Director of the Mekorot Company. The projected water deficit for 1969 is now expected to be 62 million cu m more than the anticipated supply from all sources. Although this shortage is not considered critical in view of the long-term nature of the estimate, it is indicative of the delicate balance of water in Israel.

III. The Yarmouk River Project of Jordan

In June 1961 the Burns Engineering Company International presented the Jordanian Hashemite Kingdome Authority with plans for the Yarmouk-Jordan Valley Development Project, which places primary dependence upon the waters of the Yarmouk River -- Jordan's major water resource. This proposal for irrigation in the Jordan Valley and for power generation in the northern Valley is based on five stages planned for construction. The first stage, due to be completed in 1963, will irrigate the Jordan Valley and be to be completed and a power-generating capacity of 42,700 kw is to be provided. Under terms of the 1953 Yarmouk River Treaty, Syria will receive a minimum of 10 percent of the water.

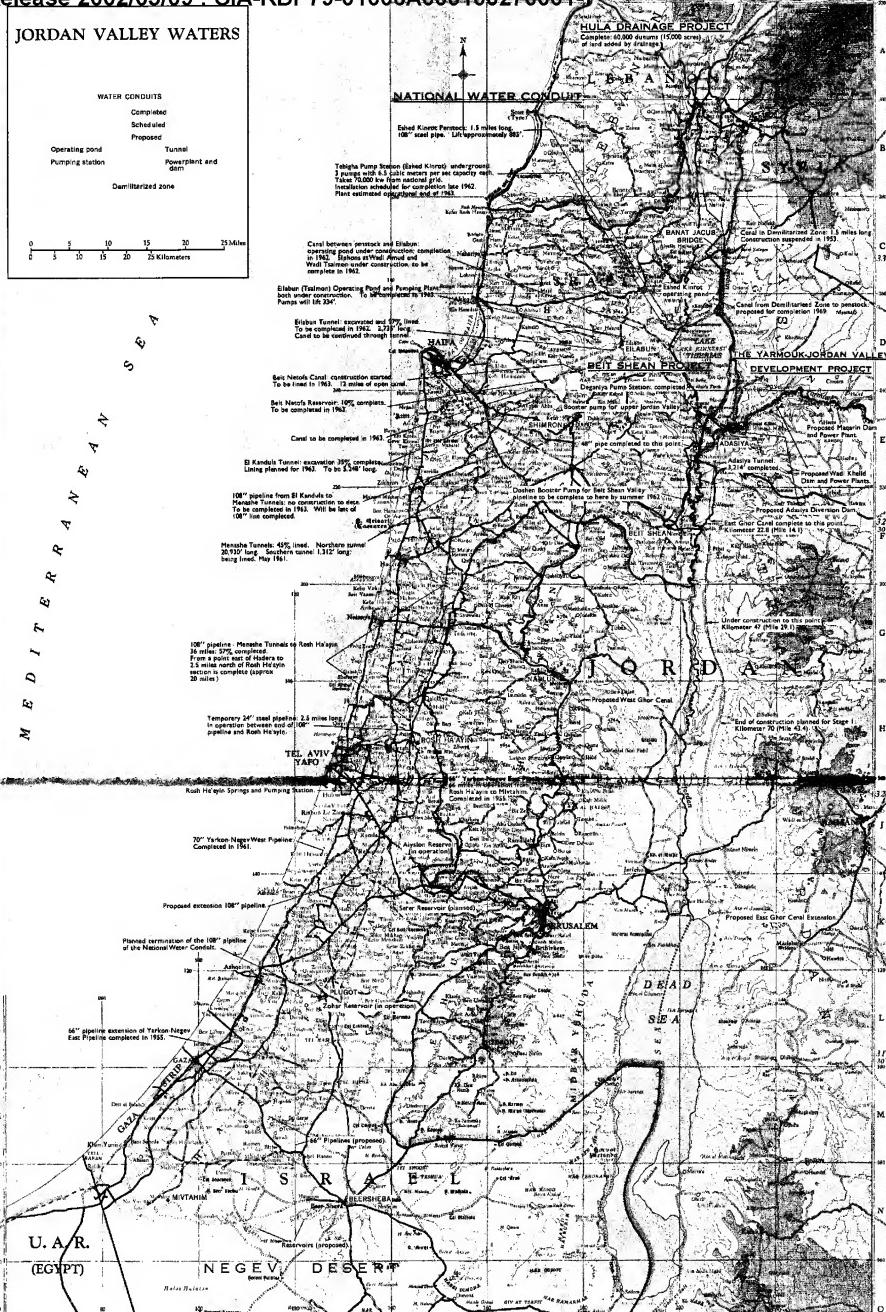
Stages I and II of the project have been included in the Jordanian Five Year Program for Economic Development (1962-67). Stage I, which is being supported by the U.S. AID Mission to Jordan, consists of a 21-kilometer tunnel and 13 miles of open canal, and is to be completed by 1963. Construction of the tunnel has officially begun in 1962 and has now been completed to Kilometer 22.8, a distance of 14.1 miles. The remaining stages call for a 25-mile extension of the East Ghor Canal and the construction of a 28-mile canal in the West Ghor that will be linked with the East Ghor Canal. Major dams, diversion structures, and pumping stations will be a storage dam on the Yarmouk at Wadi Khalid and features of Stage II. At a later date the height of the Wadi Khalid Dam is to be increased, and a storage dam is to be constructed on the Yarmouk at Meqarin. Powerplants are to be installed below Wadi Khalid and above Meqarin. The total capacity of the two proposed storage dams at Wadi Khalid and Meqarin will provide 250 and 300 million cu m of water, respectively.

When the Yarmouk-Jordan Valley Development Project is implemented, it will require more water than is available from the average annual flow of the Yarmouk River, which totals to 405 million cu m, from the storage capacity of the Wadi Khalid and Meqarin dams. In order to meet this deficiency, this can be made up through the construction of storage dams on wadies emptying into the Ghor in Jordanian-controlled territory. The original plan for the Yarmouk-Jordan Valley Project, prepared by Mekorot and the Jordanian Ministry of Irrigation in 1953, called for initial use of water from Lake Tiberias. Under the present plan, water from several, not completely under Jordanian control will be needed only in the final stages of development and then only if all land presently considered irrigable is used.

Israel has complained about the anticipated reduction in the flow of the Yarmouk River and increase in salinization of the Jordan River below Lake Tiberias that will result from diversion of Yarmouk River water by Jordan. The present flow of sweet water from the Yarmouk and Jordan Rivers lands in the Jordan Valley, the Beisan Valley, where water pumped directly from the Yarmouk and Jordan Rivers -- water that, under the Bet Shean Project, will have to be replaced by water from Lake Tiberias.

IV. Arab Diversions Threaten

Three tributaries flowing from Arab territory contribute 572 million cu m of water per year to the Jordan River in Northern Israel. The Dan River, the largest tributary, has an average flow of 228 million cu m per year. Because the Dan rises on the Syria-Israel border, its use could not effectively be denied to Israel. The Banat Jacob River, rising from the Jordan Valley, contributes 100 million cu m and contribute 17 million cu m per year. Donat of Banat and Danites water could reduce the flow of the Jordan River north of Banat Jacob Bridge by about one-half. States of the Arab Bloc have held extended discussions over proposals to divert these rivers, and the Arab League has issued a resolution calling for a complete stoppage of the flow of the Dan River. No engineering studies have been made on the engineering problems involved or on sources or funds for these retaliatory ventures.



V. Prospects

The Yarmouk is Jordan's only major hope for irrigation water and power generation. Implementation of the Yarmouk-Jordan Valley Development Project will increase the industrial potential of Jordan, nearly double the area of its irrigated land, and add 100,000 additional people to the population. For Israel the River Jordan is the last major unutilized water resource. Based upon present water consumption patterns, completion of Stage I of Israel's plan in 1963 will provide for a population increase of approximately 300,000 people. In the full project, completed by 1967, an additional 100,000 people will be accommodated, including 480,000 industrial workers. This is far short of the projected population increase of 2 million discussed optimistically in Israel and fearfully in Arab states. In view of its high dependence upon the water of Lake Tiberias, Israel is likely to expand its water resources by developing the Yarmouk River and the large degree of salinity in the lake. As a working reality, many features of the present plans for development of the water resources of the Jordan Valley could be accomplished through the use of the waters of the Jordan River. Israel and the use of water of the Yarmouk River by Jordan. Nevertheless, the chronic problem against the use of Jordan River water outside the Jordan Valley remains unaltered.

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JORDAN VALLEY WATERS

DOCUMENT NO. 2
NO CHANGE IN CLASS.
~~DECLASSIFIED~~
CLASS. CHANGED TO: TS S

WATER CONDUITS

<input checked="" type="checkbox"/> Operating pond	Tunnel
<input checked="" type="checkbox"/> Pumping station	Powerplant and dam
Demilitarized zone	
DOCUMENT NO. <u>10</u>	
NO CHANGE IN CLASS <u>U</u>	
DECISION DATE <u>11-12-90</u>	
CLASSIFICATION <u>T S C</u>	
NEXT REVIEW DATE	
AUTH: HII 08-2	10 15 20 25 Miles
0 5 10 15 20 25 Kilometers	

HULA DRAINAGE PROJECT
Completed in 1950 (1000 dunums (15,000 acres))
land added by drainage

NATIONAL WATER CONDUIT

Eshad Kirot Penstock: 1.5 miles long
108" steel pipe. Lift approximately 885'

(Eshad Kirrot): underground
5 cubic meters per sec capacity each
from natural springs
Completed construction late 1962.
operation end of 1963.

Tel Aviv-Yafo
Haifa
Jaffa
Acre
Tiberias
Kinneret
Lake Kinneret
Tiberias
Beit Shean
Shimron
Doshen
Booster Pump for Beit Shean Valley
48" pipe completed to this point

BEIT SHEAN PROJECT
Deganya Pump Station: completed
Booster pump for upper Jordan Valley

THE YARMOUK-JORDAN VALLEY DEVELOPMENT PROJECT
Proposed Maqrin Dam and Power Plant
Proposed Wadi Khalid Dam and Power Plants
Proposed Adaya Diversions Dam
East Ghor Canal completes to this point
Kilometer 22.8 (Mile 14.1)

Under construction to this point
Kilometer 47 (Mile 29.1)

Proposed West Ghor Canal

Rosh Haayin
Yarkon-Neguev East Pipeline
66" diameter
Rosh Haayin to Mirvalim
Completed in 1955.

Ayalon Reservoir (in operation)

Sarar Reservoir (planned)

DEAD SEA

MIDDLE EAST

Map showing major rivers, lakes, and geographical features of the region, including the Jordan River, the Yarmouk River, the Jordan Valley, the Dead Sea, and the Mediterranean Sea.

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